



Energy Security in the Black Sea Region in the Wake of the Ukrainian Crisis

Woodrow Wilson Center

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Content

- What is the Index of Energy Security Risks?
- Energy security risks in the Black Sea region
- The case of Bulgaria - regional trends
- Aggravating factors
 - Governance issues
 - Russian influence
- EU involvement
- US involvement
- Possible strategies forward



Tools for Quantifying Energy Security: Institute for 21st Century Energy (1)

- **Index of U.S. Energy Security Risk: Assessing America's Vulnerabilities in a Global Energy Market:**
 - annual energy risk indicator
 - uses quantifiable data, historical trend information, and government projections
 - retrospective look from 1970 to nowadays, and prospectively from nowadays to 30 years ahead

- **International Index of Energy Security Risk (IIESR):**
 - new tool (started in 2012) to help better understand and assess international energy markets
 - 75 countries (top energy users), 8 metric groups, 28 index values
 - Only historical data (back to 1980), no projections

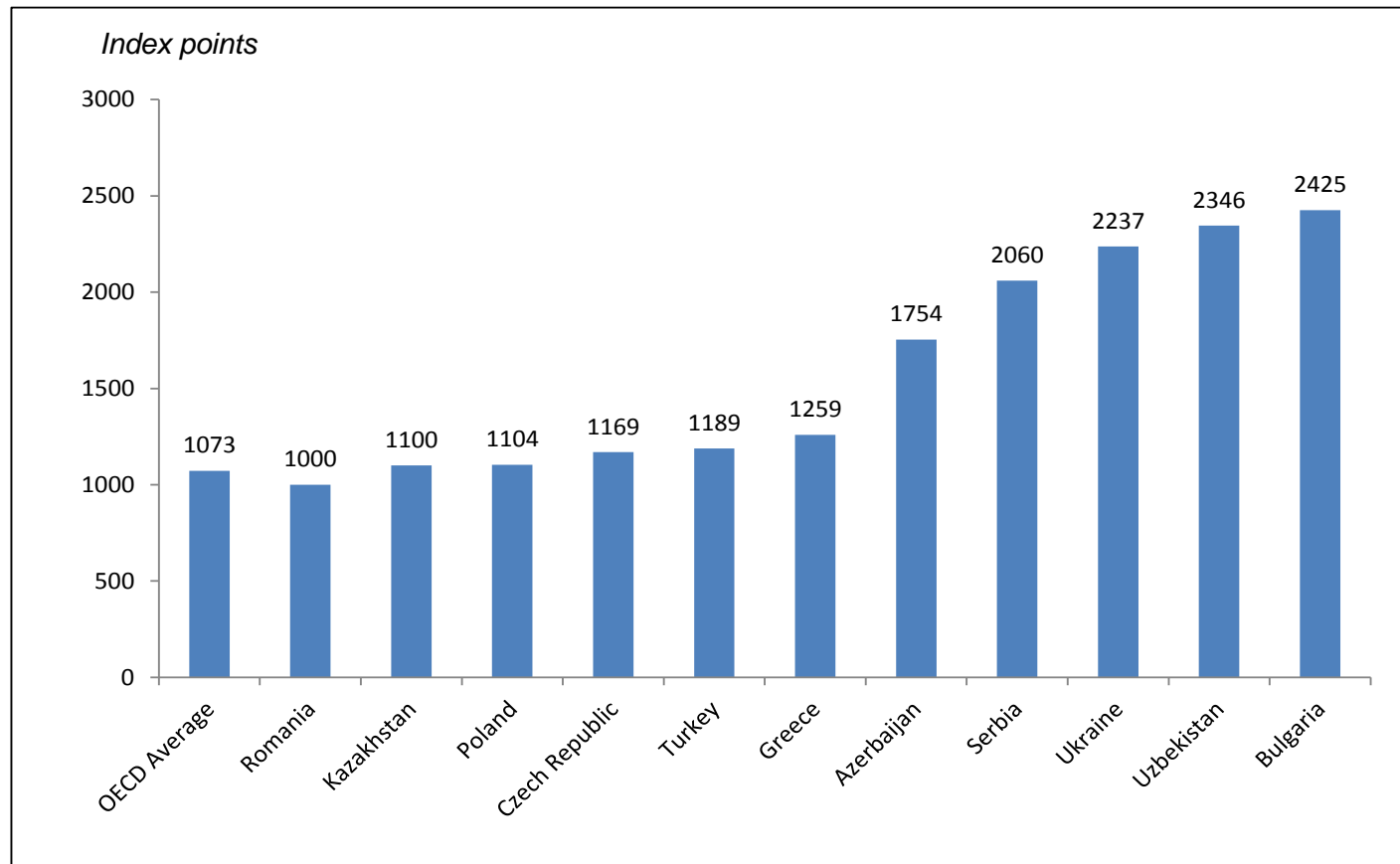


Tools for Quantifying Energy Security: Institute for 21st Century Energy (2)

- IIESR metrics used to rank 75 countries:
 - global fuel reserves
 - fuel imports
 - national energy expenditure
 - price and market volatility
 - energy use intensity
 - reliability of electricity generation
 - efficiency of the transport sector
 - environmental factors



Index of Energy Security Risks: Black Sea Region Countries Scores



Source: Institute for 21st Century Energy



Common Energy Security Vulnerabilities (1)

- Energy expenditure
- Energy efficiency and intensity
- Market volatility
- Fossil fuel import exposure and dependence
- Fossil fuel import expenditure to GDP intensity
- CO₂ to GDP intensity



Common Energy Security Vulnerabilities (2)

- **Positive results/developments:**

- Coal import exposure (100% below average OECD risk levels)
- Electricity capacity diversity (72% below average OECD risk levels)
- CO₂ emissions trend (48% below average OECD risk levels)
- Transport energy per capita (42% below average OECD risk levels)
- Energy consumption per capita (42% below average OECD risk levels)
- Retail electricity prices (31% below average OECD risk levels)
- CO₂ per capita (30% below average OECD risk levels)

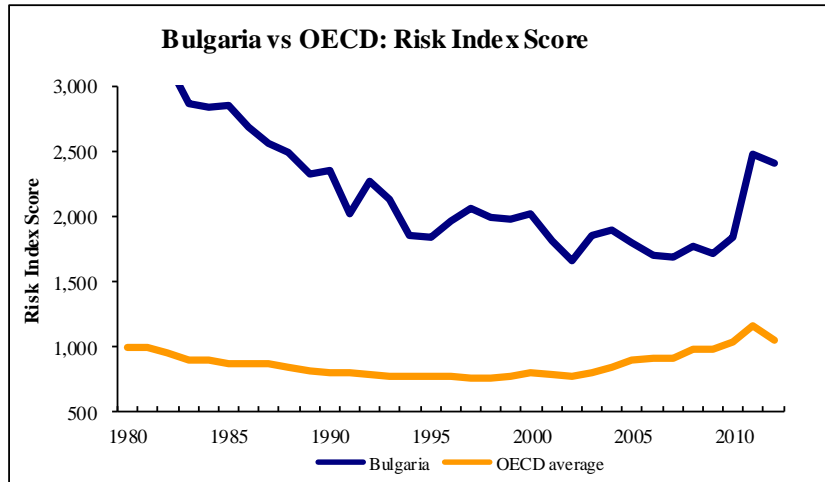
- **Main energy security challenges:**

- Energy expenditure volatility (3180% above average OECD risk levels)
- Energy expenditure intensity (855% above average OECD risk levels)
- Fossil fuel import expenditure per GDP (377% above average OECD risk levels)
- CO₂ GDP intensity (370% above average OECD risk levels)
- Energy intensity (289% above average OECD risk levels)
- Petroleum intensity (252% above average OECD risk levels)
- Transport energy intensity (197% above average OECD risk levels)
- Gas import exposure (134% above average OECD risk levels)

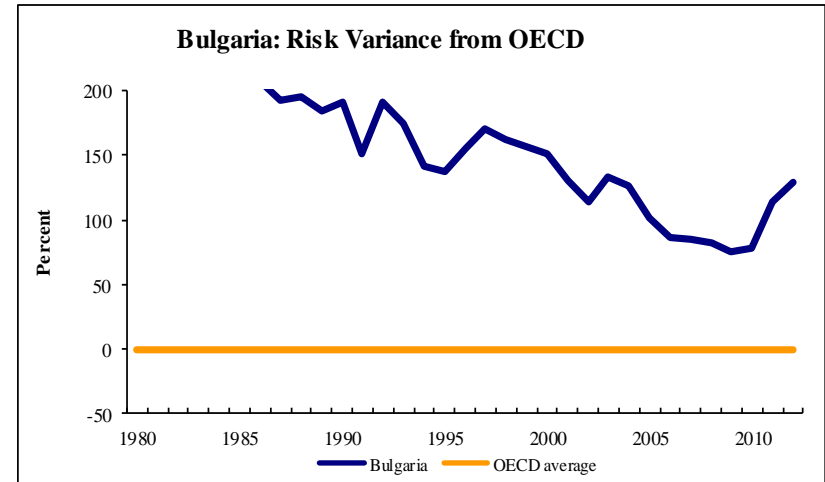


Bulgaria (1)

Bulgaria vs. OECD Risk Index Score



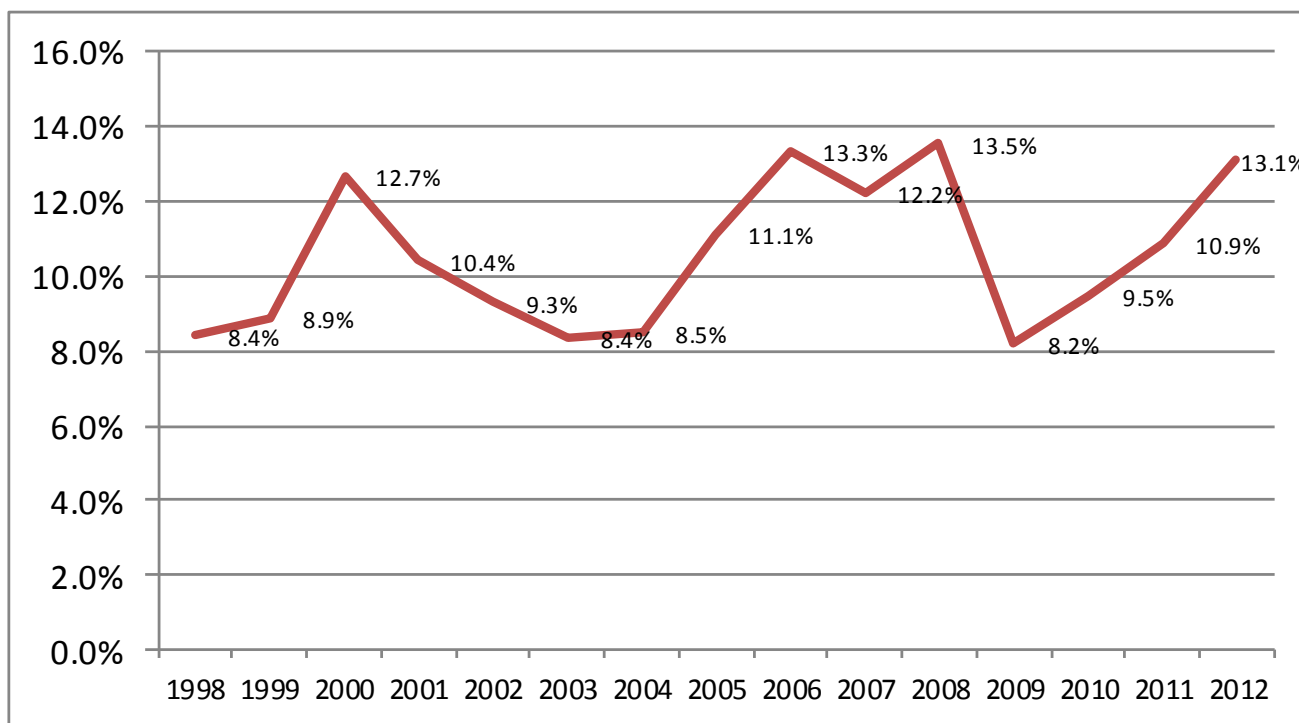
Risk Variance from OECD





Bulgaria (2)

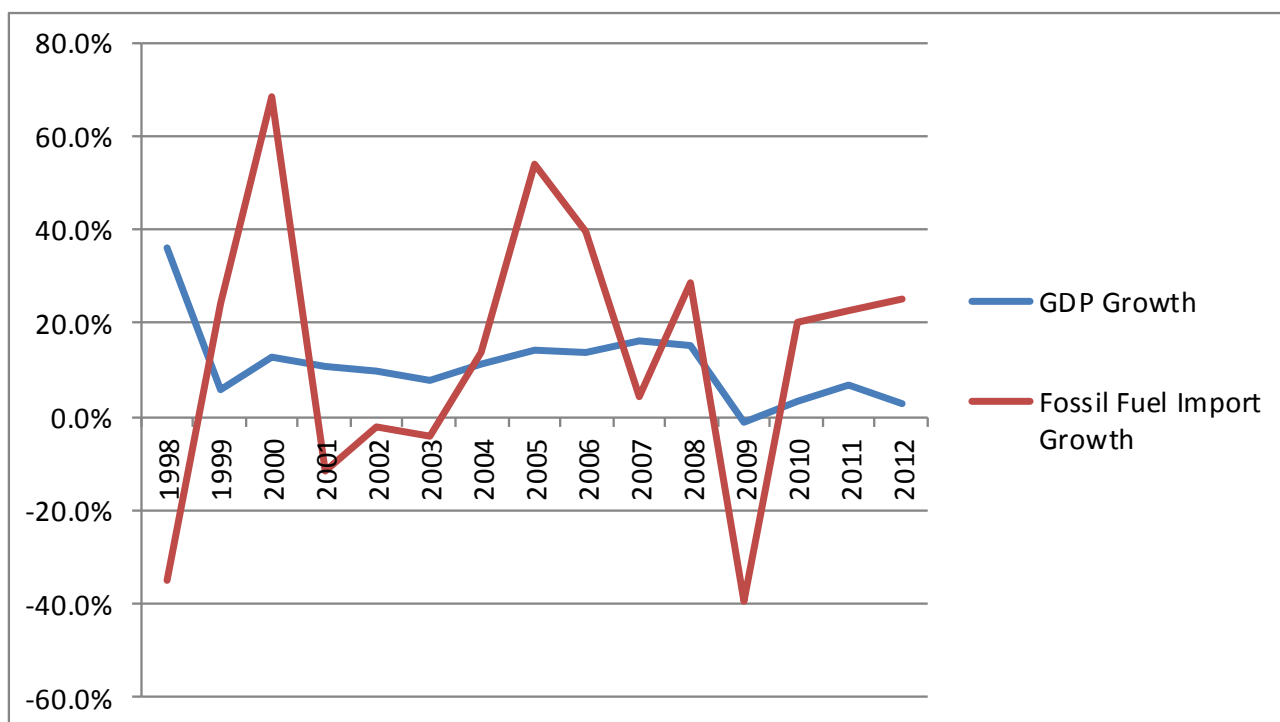
Dynamics of Fossil Fuel Import as a % of GDP (Nominal) (1998-2012)





Bulgaria (3)

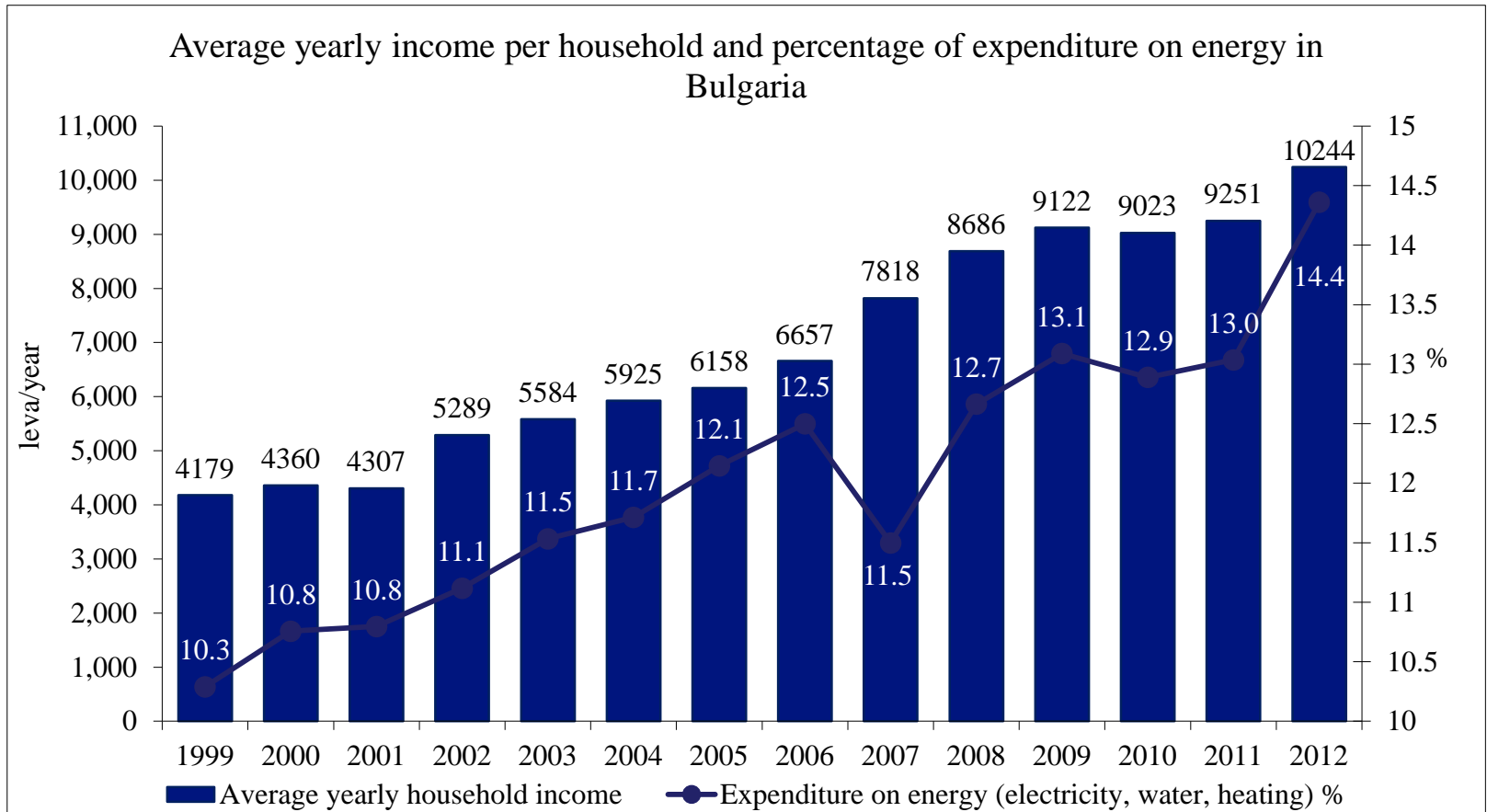
Dynamics of Fossil Fuel Import Growth vs. GDP Growth (Nominal) (1998-2012)





Bulgaria (4)

Average Annual Income per Household and Percentage of Expenditure on Energy in Bulgaria (1999-2012)

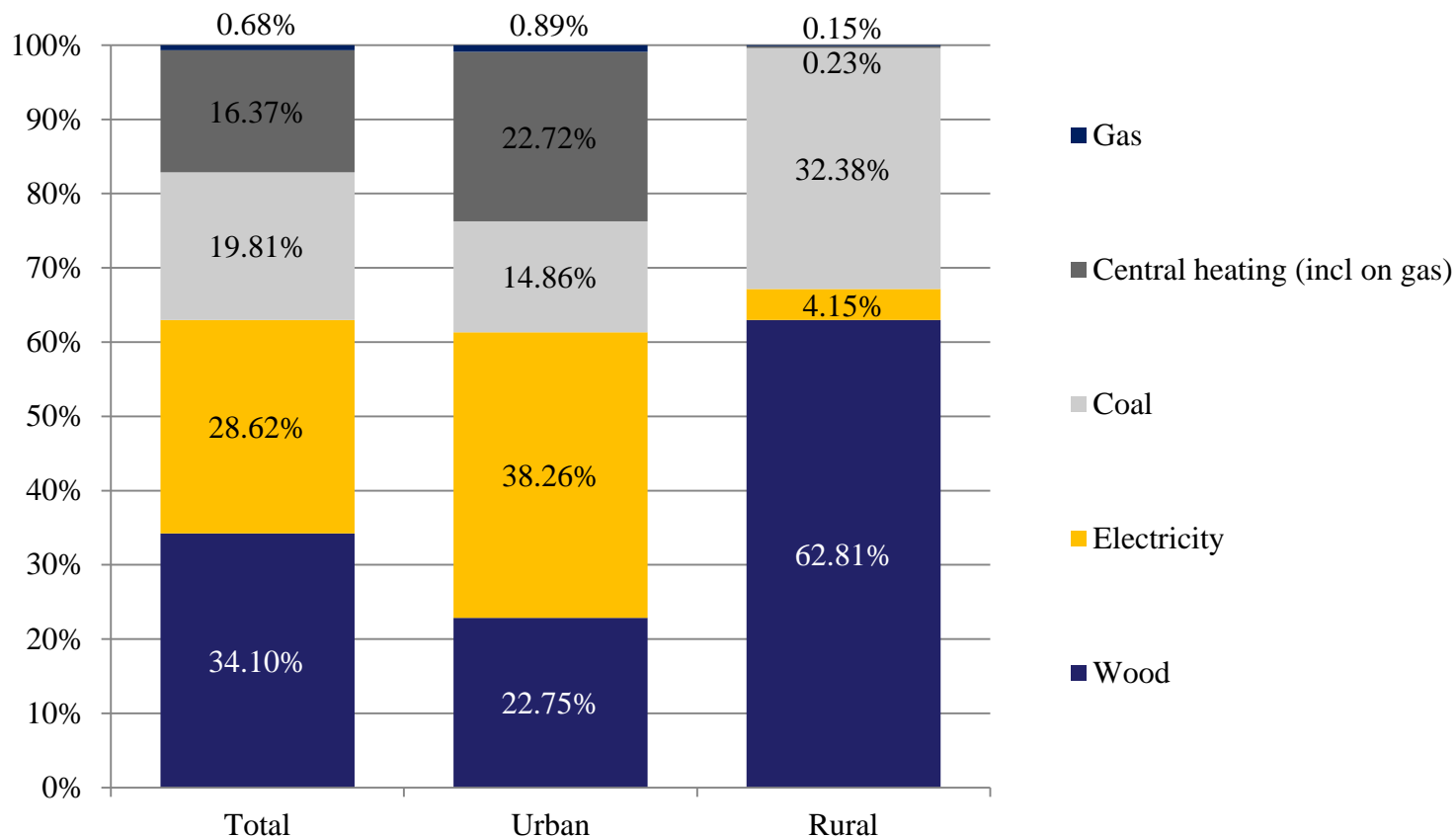


Source: Eurostat



Bulgaria (5)

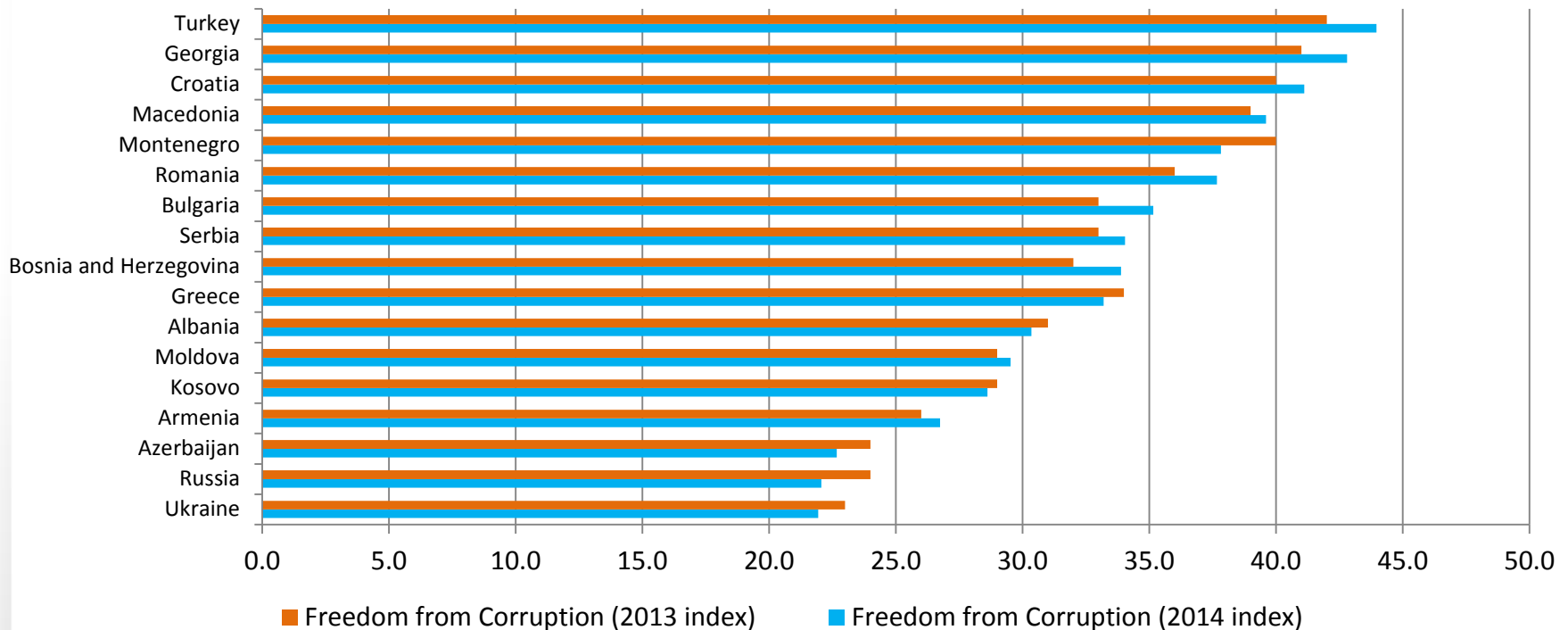
Main Heating Source by Type of Settlement (2011)





Governance Deficiencies: Transparency and Corruption Rankings

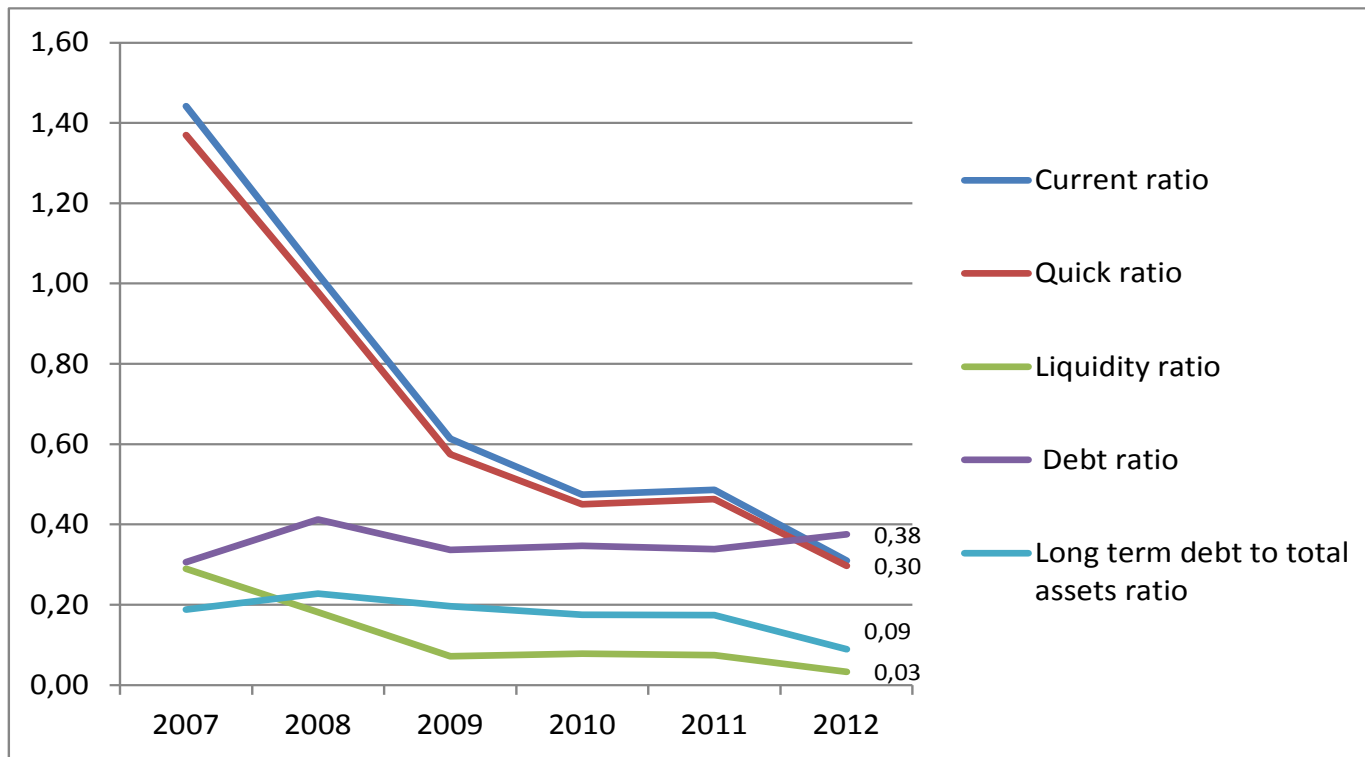
Heritage Foundation: Index of Economic Freedom





Governance Deficiencies: State-Owned Enterprises (1)

National Electric Company (Bulgaria): Key Financial Ratios

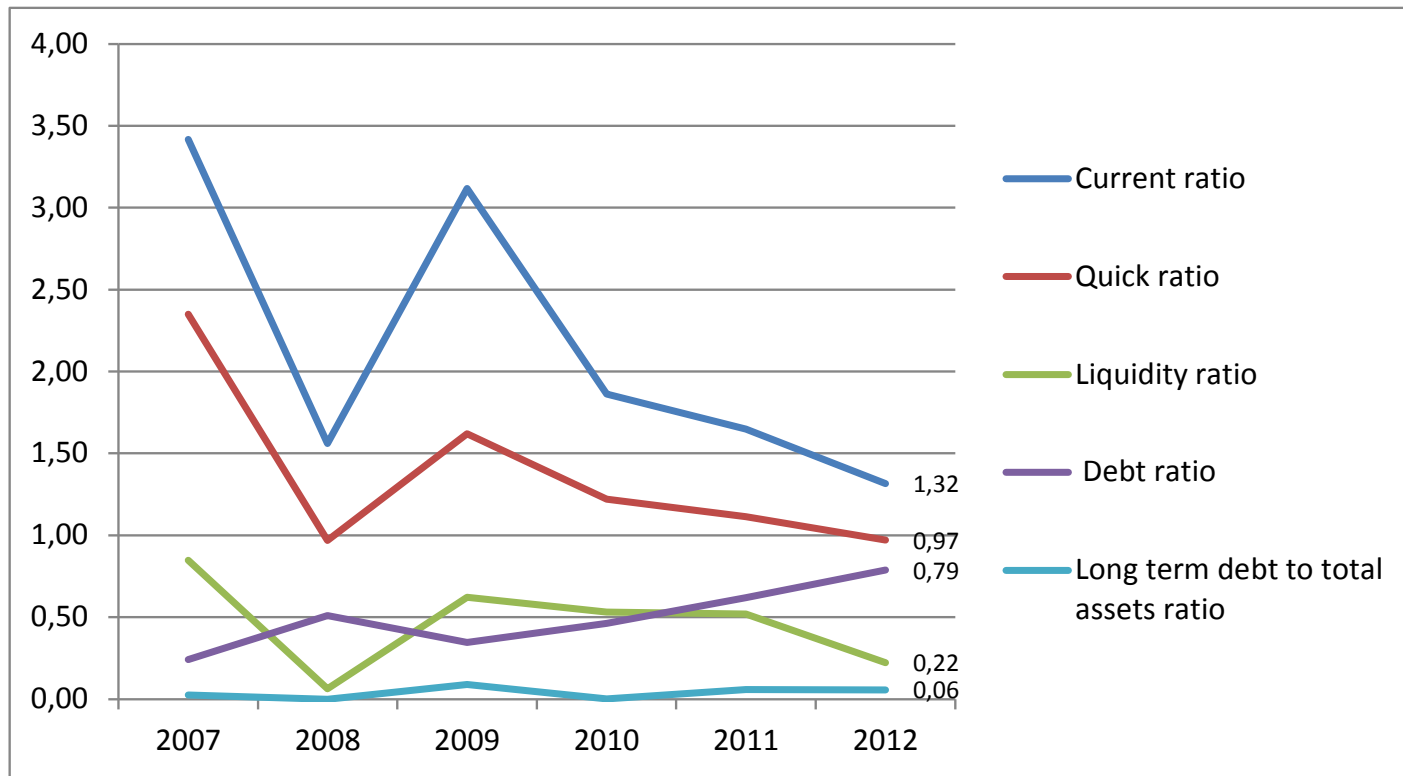


Source: CSD



Governance Deficiencies: State-Owned Enterprises (2)

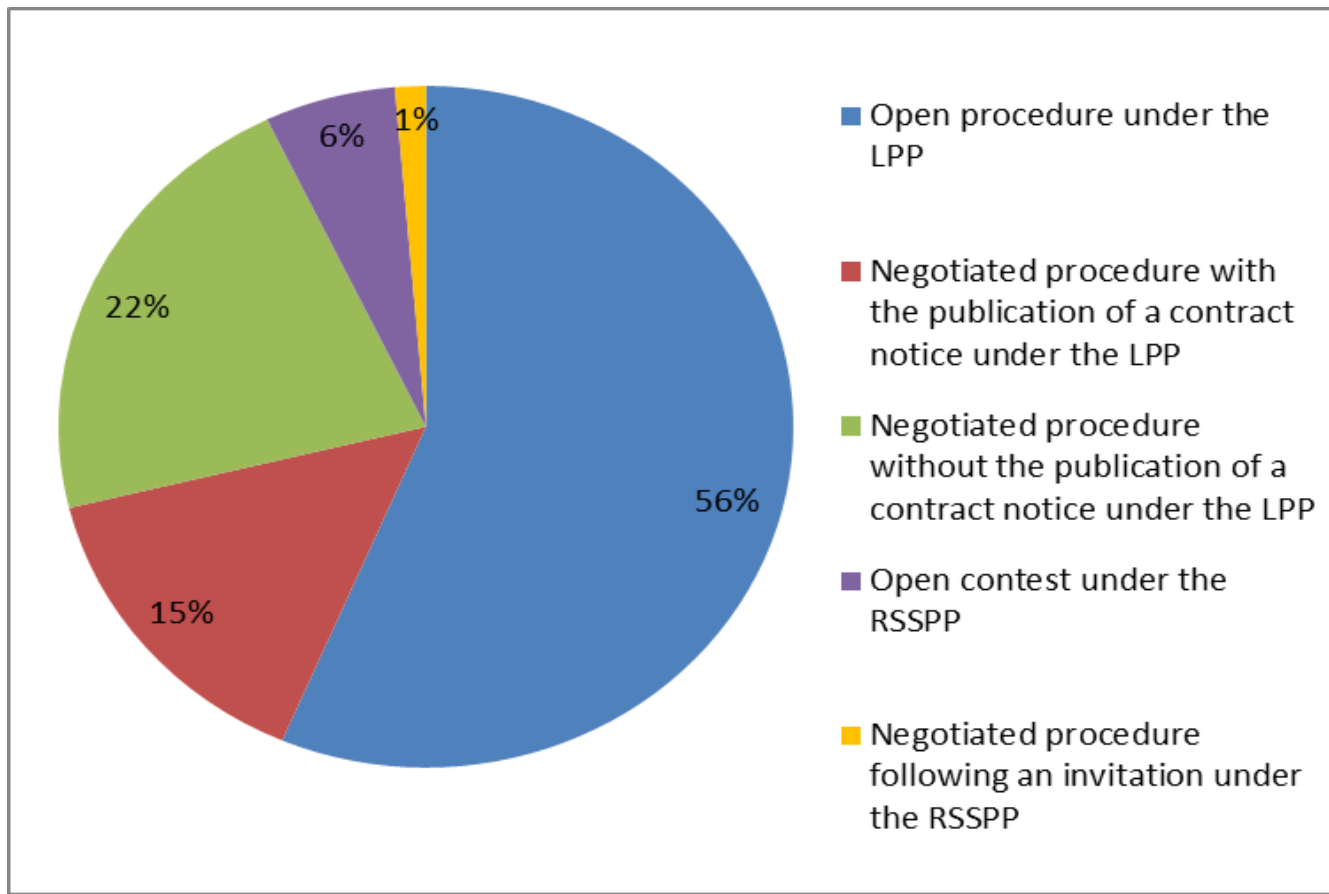
Bulgargaz (Bulgaria): Key Financial Ratios



Source: CSD



Public Procurement



Source: CSD, based on Bulgarian Public Procurement Agency



The Russian Factor: Rules of Engagement

- **Widespread corporate involvement**
 - Ownership of strategic assets and companies
 - Involvement in large-scale energy infrastructure projects
 - Energy import dependence

- **Personal political and security links**
- **Opaque and secretive corporate relations**
- **Strong pressure on all governance levels**
- **Soft power**



EU Involvement

- **EU's Neighborhood Policy**
- **EU's three pillars of energy policy**
 - Competitiveness
 - Security of energy supply
 - Sustainable development
- **Inconsistent policy implementation leading to:**
 - Major project completion failure
 - Loss of the strategic focus
 - Incoherent and fragmented regional approach
 - Bureaucratic stalling



US Involvement

- **US-Russia “reset”**
- **Official foreign policy and local representation**
- **Corporate involvement**
- **Technological leadership**



Energy Security in the Black Sea Region: Possible Strategies

- **Import diversification**
- **External technology leadership (role of US)**
- **Introduction of a EU Energy Union**
- **Regional approaches:**
 - Investment in regional gas interconnectors
 - Restarting Nabucco via a North-South link
 - Promotion of LNG supply from the Middle East and North Africa

Thank You

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